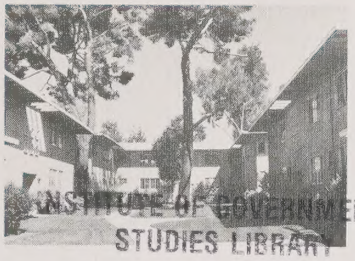

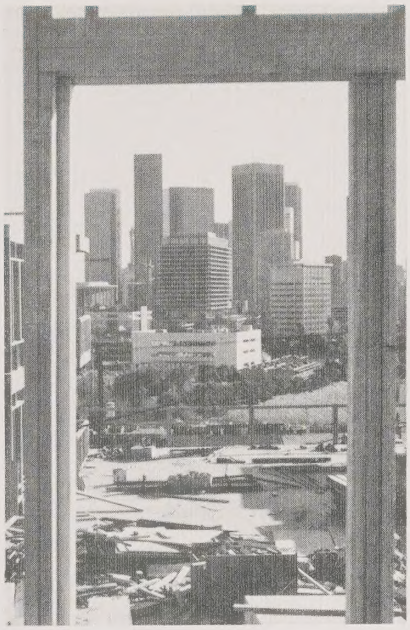

1988 Rent Stabilization Review

TECHNICAL APPENDIX

Community Development Department
City of Los Angeles

Table of Contents

INTRODUCTION

The technical appendices contained herein serve several purposes. First, all statistical data that were presented in graphical form in the main body of the report are presented in tabular form for readers with an interest in specific numerical values. Second, several of the more technical analytic methods are explained in greater detail, including the hedonic regression models used to estimate the benefits of stabilization, and the binomial probability model that was used to estimate the tenure distribution of long stayers within specific buildings. Finally, a number of supplemental tables that are referenced but not discussed in the main body of the report are included for the reader with an interest in these subjects.

The appendices are organized by Chapter, with the exception that all Chart numbers are prefaced by an "A," which indicates inclusion in the appendices. Charts not contained in the main body of the report follow the numbering system established in the report.

APPENDIX 1

CHAPTER 2

RECENT CHANGES IN HOUSING MARKET INDICATORS

CHART A-2.1

INTEREST RATES ON CONVENTIONAL
FIRST MORTGAGE LOANS: 1970 - 1987

Year	Average Annual Interest Rates
1970	8.9%
1971	7.7
1972	7.5
1973	8.3
1974	9.5
1975	9.3
1976	9.1
1977	9.1
1978	9.8
1979	10.9
1980	12.9
1981	14.5
1982	14.5
1983	11.8
1984	11.7
1985	11.2
1986	9.7
1987	8.8

Sources: The interest rate for 1987 is a simple average of monthly interest rate averages through November 1987. Interest rates form 1970 to 1974 were obtained from Table 5.10 in California's Housing, by I. Lowry et al., R-3066-CSA, The RAND Corporation, 1983. Interest rates from 1975 to November 1987 were obtained from the Federal Home Loan Bank Board publication Savings & Home Financing Source Book, and phone conversations with the Bank Board staff.

CHART A-2.2

AVERAGE ANNUAL VACANCY RATES FOR MULTI-FAMILY UNITS,
LOS ANGELES: 1977 - 1987

Year	Vacancy Rate
1977	2.8%
1978	2.5
1979	2.9
1980	3.4
1981	3.7
1982	3.9
1983	3.7
1984	3.5
1985	3.7
1986	4.0
1987	4.3

Source: Los Angeles Department of Water and Power

CHART A-2.10

MULTI-FAMILY HOUSING PRODUCTION IN LOS ANGELES CITY, SIX COMPARISON CITIES, AND LOS ANGELES COUNTY, 1974 - 1987

	New Construction		
Year	City of Los Angeles	Comparison Cities	Los Angeles County
1974	7,189	1,534	14,432
1975	5,247	862	8,908
1976	9,182	1,305	15,812
1977	11,978	1,105	21,566
1978	13,657	1,971	26,981
1979	10,747	2,961	24,189
1980	9,400	2,309	20,466
1981	7,204	1,680	15,400
1982	4,540	865	9,440
1983	8,627	2,495	17,568
1984	12,464	3,276	24,602
1985	20,507	7,565	39,371
1986	24,093	12,670	49,592
1987	16,995	7,013	38,312

SOURCES: Los Angeles Department of Building and Safety; Security Pacific Bank; Construction Industry Research Board.

CHART A-2.14

RECENT LOS ANGELES DEVELOPMENT MORATORIA

Moratorium Area/Subject	Date Effective	Affected Land Use*	Status
Ventura Blvd., Coldwater Cyn. Valley Circle Blvd. (Ord. 160,406)	11/8/85	C	Expired 11/05/87
Ventura Blvd./Cahuenga Blvd., Coldwater Cyn-Barham in the Community of Studio City (Ord. 160,514)	11/25/85	C	Expired 11/20/87
Substandard Tracts in Girard Tract in area of Canoga-Winnetka, Woodland Hills (Ord. N/A)	4/08/87	ALL	Adopted 2/20/87 New regulations 4/08/88
Hollywood -- Interim residential density regulations (Ord. 161,425)	7/02/86	MF	Expires 7/02/88
Hollywood Hills -- No permits on substandard lots (Ord.162,510)	7/31/87	SF	Expires 7/29/88
CD 13 -- Substandard Single Family Lots (Ord. N/A)	1987	SF	Expired 8/04/87
CD 13 -- Mini malls (Ord. 162,249)	6/30/87	C	Expired 8/04/87
CD 14 -- Mini malls (Ord. 162,523)	6/30/87	C	Expires 6/29/88
No. Hollywood -- Valley Village (Ord 161,765)	11/25/86	C	Expired 11/25/87
No. Hollywood -- R4 areas near redevelopment project (Ord. 163,067)	6/09/87	MF	Expires 1/25/89
Northeast L.A. -- Mt. Washington residential (Ord. 163,032)	6/17/87	SF/MF	Expires 1/14/89

Moratorium Area/Subject	Date Effective	Affected Land Use*	Status
Palms-Mar Vista -- Centinela Blvd. residential (Ord. 162,076)	4/06/87	MF	Expired 4/08/88
Palms-Mar Vista -- Military Ave. residential (Ord. 162,137)	5/08/87	MF	Expired 8/06/87
Venice Community & Palms-Mar Vista del Rey District Plan banded by -- Linclon/ Redwood/Washington/Maxella residential (Ord. 162,138)	4/01/87	C	Expires 1/29/88 Extended to 4/29/88
San Pedro -- RD1.5/R2 area (Ord. 162,533)	6/30/87	MF	Expired 1/02/88
Sherman Oaks-Studio City -- Ventura Blvd. (Ord. 160,406, 160,514)	11/08/85 11/25/85		Expired 11/08/86 Expired 11/25/86
Sherman Oaks Community -- residential area south of Ventura Blvd. (Ord.161,947)	3/04/87	MF	Expires 9/12/88
Sherman Oaks Community -- Transitional heights in multi-family residential (Ord. 161,947)	3/04/87	MF	Expires 9/08/88
Dickens Residential Bldgs. RD1.5 Max Density (Ord. 161,947)	3/04/87		Expires 9/12/88
Sherman Oaks-Studio City -- No permits for substandard lots (Ord. 162,058)	4/08/87	SF	Expired 4/08/88
Sherman Oaks Area -- I405/Ventura/Colbath/Whitsett (Ord. 162,949)	12/09/86	MF	Expired 12/18/87 Plus up to two periods of 180
So. Central L.A. -- Hotels and Motels (Ord. 161,254)	5/19/86	C	Plus 180 days

Moratorium Area/Subject	Date Effective	Affected Land Use*	Status
Venice Community -- Oxford Triangle commercial/industrial (Ord. 161,669)	10/29/86	C/M	Expired 10/29/87
Westwood Village area -- Demo/bldg. permits (Ord.162,724)	8/12/87	SF	Expired 11/10/87
West Adams-Baldwin Hills -- R4 residential (Ord. N/A)	6/02/87	MF	365 days
West L.A. -- Westwood/Pico/ Sepulveda Corridor (Ord. 160,340)	10/03/85	ALL	Expires 10/03/88
West L.A. -- DWP project Santa Monica Blvd. (Ord. 161,914, 163,038)	1/26/87 12/17/86	MF	+ 180 days, plus up to 60 days + 90 days
Westchester -- North Westchester bluffs residential (Ord. 162,444)	6/08/87	ALL	Expired 12/05/87
Westwood -- North Village residential (Ord.162,722)	8/30/85	ALL	Re-enacted 8/12/87
Westwood -- East Village residential (Ord. 162,723)	8/30/85	ALL	Re-enacted 8/12/87
Westwood -- Commercial in Village Specific Plan Area (Ord. 161,862)	1/13/85	C	No Longer listed 5/02/88
Westwood -- Traffic mitigation program (Ord. 159,725)	3/19/85	ALL	Continuous
Westwood -- Ashton/Devon residential area (Ord. 162,041)	3/16/86	MF	Expired 9/01/87

Moratorium Area/Subject	Date Effective	Affected Land Use*	Status
Westwood -- Wilkins/Selby/ Santa Monica Blvd./Bentley R3 residential (Ord. 161,915)	1/26/87	SF/MF	Expired 9/23/87
Wilmington Harbor City Dist. Plan Area -- residential density limits (Ord. 161,051, 162,741)	4/03/86	ALL	Expired 10/03/87
NW Corner of Wilton Place -- Park Mile Area Zone change (Ord. 163,173)	3/05/87	ALL	No Expiration
Citywide -- No demolition of Single Room Occupancy (Ord. 162,663,	8/04/87	MF	Expired 1/31/88
163,182,	2/01/88	MF	Expired 4/29/88
163,622) (Emergency)	5/19/88	MF	Expires 6/30/88

* SF = Single Family Residential
MF = Multi-Family Residential
C = Commerial
M = Industrial
ALL = All Development

SOURCE: HR&A, City Planning Dept., Community Development Dept., City Clerk

CHART A-2.15

SPECIFIC PLANS ADOPTED BY THE CITY OF LOS ANGELES

Area	Ordinance No.	Effective Date
Warner Ranch	142,281	11/30/71
Westwood Village (major revision)	145,048 163,202 163,203	10/08/73 1987
North Venice	154,381	11/11/80
San Vicente Boulevard		07/01/80
Flood Hazard Management	154,405	10/09/80
Park Mile	154,653	12/20/80
Wilshire-Westwood Scenic Corridor	155,044	05/14/81
Century City North	156,122	11/24/81
Century City South	156,121	12/25/81
North University Park	158,194	09/19/83
Coastal Transportation Corridor	160,394	10/04/85
Pacific Palisades Commercial Village	160,515	12/27/85
Playa Vista	160,521-160,523	12/27/87
Encino	161,481	08/10/86

SOURCE: City of Los Angeles Planning and Zoning Code, 1986

CHART A-2.16

SPECIFIC PLANS PENDING ADOPTION
BY THE CITY COUNCIL OF LOS ANGELES

-- The Central City West Area (west of the Harbor Freeway)

-- The Ventura Boulevard corridor

-- Warner Center

-- Warner Ridge

-- Chatsworth central business district

-- Granada Hills central business district

-- Reseda central business district

-- The Valley Village area in North Hollywood

-- Colorado Boulevard in the Northeast Los Angeles Community Plan area

-- A scenic corridor in through several Community Plan areas in the northwest San Fernando Valley

-- The Mulholland Scenic Corridor,

-- Various amendments to the Pacific Palisades Commercial Village Plan,

-- Harbor Gateway Center

-- Port of Los Angeles Area Transportation Plan

APPENDIX 2

CHAPTER 3

THE IMPACT OF RENT STABILIZATION ON TENANT HOUSEHOLDS

ESTIMATING THE BENEFITS OF RENT STABILIZATION

The benefits of rent stabilization were estimated using a hedonic multiple regression model originally specified and estimated in the 1984 Rental Housing Study that was based on a statistical construction of "market rents."[1] The market rents benefit estimation methodology was designed to estimate the rents that would be paid by stabilized households in the absence of rent stabilization. The benefits of stabilization are defined as the difference between the estimated market rents and the actual rents paid by tenants under the rent stabilization program.

This approach uses two pieces of housing market data that are specific to the City of Los Angeles.[2] The first were the tenure discounts received by tenants in Los Angeles prior to the adoption of rent stabilization, which were estimated from the 1977 Annual Housing Survey and reported in the 1984 study.[3] The second were the rents charged to recent movers, as reported in the 1987 tenant survey. The market rents benefit estimate incorporates both of these data to predict the rents that would be charged to tenants in the absence of rent stabilization.

Two assumptions are implied by the use of these data for the purpose of estimating benefits. First, it is assumed that the deepening of tenure discounts found in the rental housing market in Los Angeles from 1977 to 1987 were primarily attributable to

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1 See the Technical Appendices 1984 Rental Housing Study, pp. 31-34.

2 The use of housing market data that is specific to the City of Los Angeles distinguishes the markets rents approach from the imputed rents approach used in the 1984 study that relies on unstabilized rents charged in the six comparison communities.

3 The tenure discounts estimated from the 1977 data are reported in Chart 3.7, as are the estimates from the 1984 and 1987 tenant surveys.

the effects of the RSO.[4] Second, it is assumed that the rents charged to recent movers are primarily determined by market forces, and are not unduly influenced by the operation of the RSO. If these assumptions do not hold, the estimated benefits are likely to be biased upward since the RSO is not likely to reduce tenure discounts in stabilized units or to reduce rent levels in units occupied by recent movers.[5]

The benefit estimates were calculated as follows. First, a hedonic multiple regression model of contract rents was estimated on a subset of the 1987 tenant sample that corresponded to households occupying stabilized units for less than one year (i.e., recent movers). The results of this regression are shown in Chart A3.20 under the heading Recent Movers Model. Since there are no households with tenure exceeding one year in the model, coefficients are not reported for the tenure variables. The results for a regression model incorporating all stabilized units in the sample are also shown in Chart A3.20 under the heading Full Sample Model, and this model includes the estimated tenure discounts.

---

4 See Chapter 3 for additional discussion of tenure discounts.

5 Increases in tenure discounts will make the difference (i.e., benefit) between rents for sitting tenants and rents charged to recent movers greater. Thus, mistakenly attributing increases in tenure discounts to the RSO will overstate the benefits of stabilization. Similarly, if an effect of the RSO is to drive up the rents of vacated units relative to the rents that would be charged in an unregulated market, the benefits of stabilization would be biased upward.

CHART A-3.20

HEDONIC REGRESSION MODELS OF CONTRACT RENT USED TO ESTIMATE TENANT BENEFITS

	Full Sample Model	Recent Movers Model
Intercept	509.8*	478.6*
Abandoned Bldgs in Neighborhood	7.8	-16.0
Trash Present in Neighborhood	-.6	-3.0
Neighborhood Rated Good or Excellent	51.9*	53.1*
Duplex	12.31	55.5
Lowrise	.2	8.2
Highrise	51*	58.1*
2 Rooms	24.4	13.2
3 Rooms	57.4*	67.1*
4 Rooms	94.8*	126.2*
5 Rooms	148.1*	156.7*
6+ Rooms	232.4*	313.9*
Unit In Need of Repair[a]	-35.6*	-66.7*
> 1 Bath	173.6*	198.7*
Owner in Bldg.	16.9	22.9
Age of Bldg.	-1.5*	-1.1*
Length of Tenure		
1 - 2 years	2.8	-
2 - 3 years	-56.4*	-
3 - 4 years	-70.4*	-
4 - 5 years	-91.3*	-
5 - 6 years	-96.8*	-
6+ years	-174.8*	-
Hispanic	-68.8*	-78.7*
Black	-79.1*	-105.7*
R^2	.48	.54
F	40.4*	16.9*
n	986	258

Notes: *Significant at the 99% confidence level.
[a]In need of repair indicates the existence of incomplete plumbing facilities, or inadequate heating equipment, or three or more defects associated with inadequate maintenance.

The next step in the benefits estimation process was to make predictions of contract rents for all respondents to the 1987 survey who resided in stabilized units. The predicted rent is based on the characteristics of the housing units occupied by the respondents and the market values of the characteristics as estimated in the Recent Mover regression model, which necessarily excludes any tenure discount. For example, the coefficient in the Recent Mover Model identifying the existence of more than one bathroom indicates that a monthly rent premium of $198.70 is charged for units with more than one bathroom. The full sample model indicates that the rent premium associated with an additional bathroom for all households in stabilized units in the sample is $173.60. Since rent levels tend to be higher for recent movers, the market values for the housing characteristics included in the regression model are also higher in the Recent Movers Model, as the preceding example suggests. Thus, the predicted rents are estimates of the contract rents that would be charged to households in the sample <u>if</u> they had been recent mover households in 1987.

Since the majority of the respondents in the sample are not in fact recent movers, the tenure discount that these households would expect in the absence of rent stabilization must be subtracted from the rent predictions. Otherwise the benefits of rent stabilization would be overstated. The deeper tenure discounts currently found in the stabilized housing stock are assumed to be mostly due to the effects of rent stabilization, so they cannot be used to adjust the predicted rents. Instead, the tenure discounts estimated from the 1977 Annual Housing Survey which reflect market conditions prior to the adoption of the RSO are used to impute the tenure discounts that would be expected in the absence of rent stabilization. These tenure discounts range from 2.4% for household with 1-2 years tenure to 15.7% for

households with six or more years tenure.[6] Because the tenure discounts for 1977 were estimated using a semi-log regression model, the tenure discount is applied against the entire predicted rent according to the equation that follows:

Adjusted Market Rent = Predicted Market Rent (1 - Tenure Discount),

where 0 <= Tenure Discount <=1.

Having made this adjustment, the monthly benefit of rent stabilization for a given household is calculated as the difference between the Adjusted Market Rent and the actual contract rent reported in the survey.

ASKED-FOR-RENTS

In order to develop a timely and accurate historical data series on market level rents by size of unit and area of the City, the RSD undertook a survey of the "asked-for-rents" listed in classified advertisements for rental units. The survey utilized a variety of local newspapers as well as citywide publications, including the Los Angeles Times and the Daily News. To ensure the representativeness of the rent statistics, the surveys were performed for periods where other rental data were available for comparison purposes. Keeping this restriction in mind, the RSD generated the asked-for-rent statistics shown in Chart A-3.21 below for March 1977, August 1978, March 1980, August 1984, and October 1987.

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6 See Chart 3.7 for the tenure discounts found in Los Angeles in 1977, 1984, and 1987.

The rent statistics for 1977 and 1978 simply indicate the level of rents of landlords wish to receive for vacant units of various sizes located in the six LMPA's. However, the rent statistics for 1980, 1984 and 1987, are an amalgam of requested rents in the stabilized stock and unstabilized stock.

Both the mean and median asked-for-rents were calculated. These statistics are disaggregated by LMPA, number of bedrooms, and by number of bedrooms within LMPA.[7] The citywide statistics have been weighted to account for the differences in the number of rental units and vacancy rates found across LMPA's.

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7 A map of the LMPA's is displayed in Chart 1.2.

CHART A-3.21

AVERAGE AND MEDIAN ASKED-FOR-RENTS, BY LMPA AND NUMBER OF BEDROOMS, AND BY LMPA BY NUMBER OF BEDROOMS: 1977 TO 1987

	MARCH 1977	AUGUST 1978	MARCH 1980	AUGUST 1984	OCTOBER 1987
CITYWIDE RENTS					
AVERAGE	$224.77	$274.99	$362.25	$480.48	$567.88
MEDIAN	$198.74	$251.07	$339.12	$435.77	$532.25
RENTS BY LMPA					
LMPA 1					
AVERAGE	$143.75	$210.43	$248.53	$399.55	$470.00
MEDIAN	$147.50	$230.00	$250.00	$415.00	$490.00
LMPA 2					
AVERAGE	$148.41	$196.67	$270.56	$366.36	$439.41
MEDIAN	$140.00	$170.00	$265.00	$350.00	$425.00
LMPA 3					
AVERAGE	$196.06	$222.96	$294.61	$438.83	$527.51
MEDIAN	$180.00	$210.00	$275.00	$405.00	$495.00
LMPA 4					
AVERAGE	$233.38	$287.78	$352.33	$502.04	$609.80
MEDIAN	$215.00	$265.00	$335.00	$450.00	$590.00
LMPA 5					
AVERAGE	$370.54	$415.00	$541.67	$718.16	$788.56
MEDIAN	$362.00	$445.00	$525.00	$650.00	$695.00
LMPA 6					
AVERAGE	$282.44	$290.88	$465.78	$516.37	$638.05
MEDIAN	$265.00	$260.00	$450.00	$500.00	$600.00

AVERAGE RENTS BY NUMBER OF BEDROOMS

0 BR	$151.25	$183.95	$242.43	$334.57	$412.34
1 BR	$182.77	$253.06	$323.16	$438.00	$521.26
2 BR	$296.37	$346.63	$462.18	$608.54	$709.56
3 BR	$403.39	$442.90	$599.56	$791.94	$886.22

AVERAGE RENTS BY LMPA & NUMBER OF BEDROOMS

LMPA 1					
0 BR	$103.13	$125.00	$200.00	$287.50	$339.09
1 BR	$158.89	$202.73	$238.85	$368.33	$464.60
2 BR	$206.67	$248.33	$306.67	$467.50	$557.78
3 BR	NA	NA	NA	NA	$940.94
LMPA 2					
0 BR	$121.67	$120.83	$145.00	$284.26	$358.19
1 BR	$130.56	$177.81	$208.00	$349.69	$414.23
2 BR	$206.82	$282.86	$357.78	$467.50	$528.65
3 BR	NA	$350.00	$426.67	NA	$715.00
LMPA 3					
0 BR	$139.60	$171.00	$231.60	$334.63	$395.78
1 BR	$202.14	$248.78	$322.07	$449.36	$540.65
2 BR	$291.12	$319.06	$474.38	$629.47	$720.83
3 BR	$600.00	$525.00	NA	$699.00	$841.67
LMPA 4					
0 BR	$173.47	$213.84	$284.29	$359.92	$424.52
1 BR	$200.01	$253.74	$318.21	$454.39	$531.50
2 BR	$261.43	$338.50	$417.59	$622.22	$706.70
3 BR	$346.73	$403.50	$526.00	$793.75	$901.25

LMPA 5					
0 BR	$212.00	$328.00	$333.33	$535.00	$603.33
1 BR	$301.82	$391.36	$441.54	$594.33	$715.48
2 BR	$424.83	$441.36	$691.43	$796.30	$934.09
3 BR	$513.00	$530.00	$761.25	$880.83	NA
LMPA 6					
0 BR	$133.33	$127.40	$252.00	$356.40	$428.37
1 BR	$184.64	$193.75	$318.96	$429.23	$543.10
2 BR	$279.00	$284.71	$485.86	$561.11	$702.82
3 BR	$409.44	$487.22	$621.59	$709.38	$1,019.21

CITYWIDE MEDIAN RENTS

0 BR	$149.31	$143.81	$241.11	$326.29	$403.47
1 BR	$176.42	$193.31	$327.22	$419.45	$500.31
2 BR	$274.05	$277.64	$446.81	$557.12	$687.00
3 BR	$401.11	$406.21	$543.47	$724.92	$870.16

MEDIAN RENTS BY LMPA & NUMBER OF BEDROOMS

LMPA 1					
0 BR	$107.50	$125.00	$200.00	$287.50	$350.00
1 BR	$160.00	$195.00	$250.00	$400.00	$490.00
2 BR	$200.00	$250.00	$295.00	$497.50	$600.00
3 BR	NA	NA	NA	$585.00	$940.00
LMPA 2					
0 BR	$100.00	$95.00	$135.00	$295.00	$350.00
1 BR	$125.00	$157.50	$200.00	$350.00	$400.00
2 BR	$180.00	$250.00	$335.00	$475.00	$500.00
3 BR	NA	$350.00	$400.00	NA	$715.00
LMPA 3					
0 BR	$140.00	$165.00	$225.00	$350.00	$395.00
1 BR	$195.00	$235.00	$325.00	$450.00	$525.00
2 BR	$277.50	$312.50	$490.00	$595.00	$675.00
3 BR	$400.00	$525.00	NA	$695.00	$875.00
LMPA 4					
0 BR	$170.00	$205.00	$275.00	$360.00	$425.00
1 BR	$195.00	$240.00	$325.00	$445.00	$515.00
2 BR	$250.00	$315.00	$425.00	$590.00	$675.00
3 BR	$325.00	$375.00	$525.00	$750.00	$920.00
LMPA 5					

0 BR	$215.00	$575.00	$355.00	$600.00	$675.00
1 BR	$325.00	$385.00	$475.00	$525.00	$700.00
2 BR	$385.00	$450.00	$600.00	$775.00	$1,050.00
3 BR	$500.00	$530.00	$650.00	$950.00	NA
LMPA 6					
0 BR	$125.00	$150.00	$240.00	$350.00	$425.00
1 BR	170.00	$180.00	$325.00	$425.00	$550.00
2 BR	$265.00	$275.00	$450.00	$550.00	$695.00
3 BR	$425.00	$495.00	$650.00	$675.00	$995.00

APPENDIX 3

CHAPTER 4
THE SITUATION OF LOS ANGELES APARTMENT OWNERS

CHART A-4.9

INDICATORS OF INSURANCE COSTS FOR
RENTAL PROPERTIES IN LOS ANGELES: ISO MANUAL RATES

Year	Manual Rate Cost Index - Apartments	Manual Rate Cost Index - 4 Dwelling Units
1980	100	100
1981	95	150
1982	105	194
1983	138	256
1984	138	256
1985	268	494
1986	268	494
1987	268	494

Source: Insurance Services Office, Commercial Lines Manual, General Liability, California, various editions. Copyright, Insurance Services Office, Inc., 1987.

CHART A-4.10

INDICATORS OF INSURANCE COSTS FOR

RENTAL PROPERTIES IN LOS ANGELES: 1980 - 1986

Year	Manual Rate Cost Index - Apartments	Manual Rate Cost Index - Four Dwelling Units	IREM Insurance Cost Index	CPI - All Urban Consumers
1980	100	100	100	100
1981	95	150	110	110
1982	105	194	110	116
1983	138	256	120	118
1984	138	256	140	124
1985	268	494	160	129
1986	268	494	230	134

Sources: Commercial Lines Manual, General Liability, California, Insurance Services Office, various editions. Copyright, Insurance Services Office, Inc., 1987. CPI Detailed Report, Bureau of Labor Statistics, various issues. INCOME/EXPENSE ANALYSIS - APARTMENTS, Institute of Real Estate Management, various editions.

CHART A-4.11

INDICATORS OF INSURANCE COSTS FOR

RENTAL PROPERTIES IN LOS ANGELES: 1983 - 1986

Year	IREM Insurance Cost Index	CPI - All Urban Consumers	FTB Insurance Cost Index
1983	100	100	100
1984	117	105	119
1985	133	109	142
1986	192	113	174

Sources: CPI Detailed Report, Bureau of Labor Statistic, various issues. INCOME/EXPENSE ANALYSIS - APARTMENTS, Institute of Real Estate Management, various editions. Unpublished Franchise Tax Board tabulations of income tax returns for stabilized properties in Los Angeles.

CHART A-4.12
INSURANCE EXPENSE AS A PERCENTAGE OF
OPERATING EXPENSES: 1980 - 1986

Year	IREM Insurance Cost/Operating Expenses	FTB Insurance Cost/Operating Expenses
1980	5.4%	NA
1981	5.3	NA
1982	4.6	NA
1983	4.9	7.3%
1984	5.7	8.1
1985	5.4	9.1
1986	7.2	9.8

Sources: INCOME/EXPENSE ANALYSIS - APARTMENTS, Institute of Real Estate Management, various editions. Unpublished Franchise Tax Board tabulations of income tax returns for stabilized properties in Los Angeles.

CHART A-4.13

OPERATING EXPENSES AND INSURANCE EXPENSES

AS A PERCENTAGE OF GROSS POSSIBLE RENTS: 1980 - 1986

Year	IREM Insurance Cost/Gross Possible Rents	IREM Operating Expenses/Gross Possible Rents
1980	2.2%	41.2%
1981	2.1	39.7
1982	1.8	38.3
1983	1.9	38.0
1984	2.2	37.6
1985	2.0	37.3
1986	2.8	38.9

Source: INCOME/EXPENSE ANALYSIS - APARTMENTS, Institute of Real Estate Management, various editions.

CHART A-4.14

OPERATING EXPENSES AND INSURANCE EXPENSES

AS A PERCENTAGE OF ACTUAL RENTS: 1983 - 1986

Year	FTB Insurance Cost/Gross Possible Rents	FTB Operating Expenses/Gross Possible Rents
1983	3.1%	42.3%
1984	3.2	39.7
1985	3.5	38.7
1986	4.0	40.7

Source: Unpublished Franchise Tax Board tabulations of income tax returns for stabilized properties in Los Angeles.

APPENDIX 4

CHAPTER 6
THE PROBLEM OF HISTORICALLY LOW RENTS

BELOW MARKET RENTS

The hedonic regression model used to evaluate the existence of "below market" rents paid to long stayers is shown in the Chart A-6.1. This model differs from the hedonic regression models used in the market rent benefit estimates in several ways. First, building size dummies were substituted for the structure type variables (duplex, lowrise, and highrise) used in the markets rents benefits model.[8] Second, the tenure dummies were recategorized to identify households that had occupied their units since 1978 (i.e., long stayers with 9+ years tenure). Third, interaction terms were computed for long stayer households across the four unit size categories. Finally, dummy variables indicating LMPA were included to control for differences in rents by location. As discussed in the body of the Report, this model indicates that long stayers in smaller rental properties are not charged rents that deviate below the rents charged to long stayers in larger properties.

Examination of the four coefficients for the interaction of long stayers and unit size (e.g., long stayers & 2-5 units) indicate that none of the coefficients are significantly different from zero, and the signs of two coefficients are contrary to the historically low rents hypothesis. The sensitivity of this model to the specification was examined in several ways. Respecifications included a logarithmic transformation of the dependent variable, contract rent; exclusion of the LMPA location variables; inclusion of the structure type variables; and the definition of a dummy variable for small buildings only (defined as 2-5 units) with a corresponding interaction term for long stayers. Although the values of the

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8 The structure type variables were excluded to avoid collinearity with the building size variables.

estimated coefficients shifted somewhat between model specifications, the coefficients in question never approached a meaningful level of statistical significance.

CHART A-6.1

HEDONIC REGRESSION MODEL OF CONTRACT RENT USED TO ESTIMATE EXISTENCE OF BELOW MARKET RENTS

	Full Sample Model
Intercept	532*
Abandoned Bldgs in Neighborhood	-19.0
Trash Present in Neighborhood	-3.2
Neighborhood Rated Good or Excellent	43.2*
Duplex	-
Lowrise	-
Highrise	-
2 Rooms	20.2
3 Rooms	63.5*
4 Rooms	112.1*
5 Rooms	167.0*
6+ Rooms	221.1*
Unit In Need of Repair[a]	-42.1*
> 1 Bath	159.8*
Owner in Bldg.	-34.4
Age of Bldg.	-14.4*
Length of Tenure	
1 - 2 years	-5.0
2 - 3 years	-52.8*
3 - 4 years	-57.4*
4 - 5 years	-70.2*
5 - 6 years	-61.9*
6 - 8 years	-135.5*
9+ Years	-200.6*
Hispanic	-68.8*
Black	-79.1*
2 - 5 units	-79.9*
6 - 10 units	-84.8*
11 - 20 units	-67.7*
21 - 49 units	-59.0*
Long stayer & 2-5 units	39.6

Long stayer & 6-10 units	-5.3
Long Stayer & 11-20 units	-3.6
Long stayer & 21-49 units	52.3
LMPA 1	16.3
LMPA 2	51.1*
LMPA 3	33.4
LMPA 4	196.6*
LMPA 5	46.2
R^2	.55
F	29.1*
n	914

Notes: *Significant at the 99% confidence level.
[a]In need of repair indicates the existence of incomplete plumbing facilities, or inadequate heating equipment, or three or more defects associated with inadequate maintenance.

BINOMIAL PROBABILITY MODEL OF LONG STAYER TENURE

The probability of long stayer households in stabilized rental properties was estimated using the binomial probability distribution which is of the form:

$$P(R=r \mid n,p)=\binom{n}{r}p^r q^{n-r} \text{ for } 0 \le r \le n.$$

R is a random variable representing the number of long stayers occupying a building with n units, with a probability p that a long stayer household occupies a unit, and a probability q that a long stayer does not occupy a unit. The proportion of long stayers by building size was estimated from the 1987 tenant survey and used to approximate the probability of occupancy by a long stayer households, .17 for building with 2-5 units and .18 for buildings with 10 and 20 units.

The use of the binomial distribution assumes that the probability of the event, in this case, occupancy of a rental unit by a long stayer household is constant across all stabilized rental buildings. To the extent that p is not constant, the

binomial model will overstate or understate the probability of long stayer occupancy for buildings where p deviates from the assumed p. This situation may occur when household types with above or below average tenure congregate within a building.

CHART A-6.2

AVERAGE TENURE IN UNIT,
BY NUMBER OF UNITS IN BUILDING: 1987

Number of Units In Building	Average Tenure
2-5	5.0
6-10	5.1
11-20	4.7
21-49	4.9
50+	4.3

CHART A-6.3

TENANT TENURE DISTRIBUTION, BY NUMBER OF UNITS IN BUILDING: 1987

Number of Units In Building	Tenure Distribution: (years) < 1	1-3	4-5	6-8	9+	
2-5	22.5%	27.9%	20.7%	12.1%	16.8%	100%
6-10	23.3	29.2	19.2	10.3	18.1	100%
11-20	27.0	30.9	15.5	8.6	18.0	100%
21-49	23.8	30.9	17.0	9.9	18.4	100%
50+	32.6	29.2	14.6	9.0	14.6	100%

CHART A-6.10

AGE OF HOUSEHOLD HEAD, BY NUMBER OF UNITS IN BUILDING: 1987

Number of Units In Building	Age Of Household Head: (years) < 30	30-62	> 62	
2-5	20.7%	65.4%	13.9%	100%
6-10	25.6	57.1	17.3	100%
11-20	24.7	61.2	14.2	100%
21-49	28.5	55.6	15.9	100%
50+	24.8	61.5	13.7	100%

CHART A-6.11

HOUSEHOLD INCOME DISTRIBUTION, BY NUMBER OF UNITS IN BUILDING: 1987

Number of Units In Building	Household Income: < $10,000	$10,000 to 19,999	$20,000 to 29,999	$30,000 to 39,000	> $40,000	
2 - 5	11.4%	26.0%	25.6%	17.2%	21.0%	100%
6 - 10	13.3	29.5	26.3	14.3	18.4	100%
11 - 20	18.0	30.6	22.5	14.8	16.8	100%
21 - 49	12.5	27.3	27.3	18.0	17.0	100%
50+	13.6	23.1	18.0	23.9	26.5	100%

CHART A-6.12

GROSS RENT TO INCOME RATIOS, BY NUMBER OF UNITS IN BUILDING: 1987

Number of Units In Building	Gross Rent To Income Ratio: < .20	.20 - .299	.30 - .399	> .40	
2-5	38.1%	26.5%	12.1%	23.3%	100%
6-10	33.0	26.7	15.1	25.2	100%
11-20	28.8	26.6	18.5	26.1	100%
21-49	27.5	33.3	18.7	20.5	100%
50+	34.3	33.3	5.7	26.7	100%

CHART A-6.13

RACE/ETHNICITY OF HOUSEHOLD HEAD, BY NUMBER OF UNITS IN BUILDING: 1987

Number of Units In Building	Race/Ethnicity of Household Head: White	Black	Hispanic	Other	
2-5	40.4%	14.7%	38.0%	6.9%	100%
6-10	44.8	9.5	36.3	9.5	100%
11-20	50.2	12.6	26.4	10.7	100%
21-49	60.0	7.7	27.8	4.5	100%
50+	66.0	6.4	14.7	12.7	100%

CHART A-6.14

HOUSEHOLD SIZE, BY NUMBER OF UNITS IN BUILDING: 1987

Number of Units In Building	Household Size: (persons) 1	2	3 - 5	5 +	
2-5	17.5	28.7	34.4	19.5	100%
6-10	28.9	31.1	27.4	12.6	100%
11-20	29.1	34.5	29.5	7.0	100%
21-49	34.3	31.9	27.0	6.9	100%
50+	41.0	29.8	22.8	6.3	100%